REMARKS

Reconsideration of the application in view of the following remarks is respectfully requested. No claims have been added, cancelled, or amended. Thus, Claims 1, 3-17, and 19-32 are currently pending in the application.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 3 and 19 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Claims 1, 4-17, and 20-32 stand rejected under 35 U.S.C. § 103(a) as allegedly being anticipated by U.S. Patent No. 5,842,002 issued to Schnurer et al. ("*Schnurer*") in view of U.S. Patent No. 6,357,008 issued to Nachenberg ("*Nachenberg*").

Applicant respectfully traverses.

Independent Claim 1

With regard to independent Claim 1, there is recited:

A computer-implemented method for executing an untrusted program, comprising:

establishing a limited environment within a general environment, wherein said limited environment comprises at least one mock resource, wherein said general environment comprises at least one real resource, **wherein said limited environment and said general environment are both provided by the same operating system,** and wherein programs executing within said limited environment cannot access the one or more real resources in said general environment;

executing at least a portion of an untrusted program within said limited environment; and

examining said limited environment after execution of at least said portion of said untrusted program to check for undesirable behavior exhibited by said untrusted program (emphasis added).

Claim 1 provides an advantageous method for executing an untrusted program. According to Claim 1, a computer-implemented method establishes a limited environment within a general environment. The general environment comprises one or more real resources, while the limited environment comprises one or more mock resources. The general environment and the limited environment are both provided by the same operating system. Programs executed within the limited environment cannot access the one or more real resources of the general environment. The limited environment is examined after execution of the untrusted program to check for undesirable behavior exhibited by the untrusted program. Advantageously, the behavior of the untrusted program may be verified without putting the real resources in the general environment at risk.

Claim 1 recites the feature of "wherein said limited environment and said general environment are both provided by the same operating system." The Office Action acknowledges, "*Schnurer* does not specifically teach wherein said limited environment and said general environment are both provided by the same operating system." Instead, the Office Action relies upon *Nachenberg* to show this feature by stating:

> Nachenberg teaches an antivirus program that includes a decryption, exploration and evaluation phases/modules causing a CPU emulator with virtual memory to simulate untrusted programs/instructions [Nachenburg, col. 1, lines 16-20; col. 5, lines 27-40; col. 6, lines 52-58; col. 7, line 31 – col. 8, line 47].

However, *Nachenberg* fails to teach or suggest that the same operating system provides both a limited environment and a general environment. FIG. 1 of *Nachenberg* clearly shows that the antivirus main 151, the decryption module 152, the exploration module 154, the evaluation module 156, the CPU emulator 158, and the virtual memory

160 are <u>separate and distinct</u> from the operation system 150. Thus, it is clear from FIG. 1, and the corresponding description, of *Nachenberg* that any act or function that is performed by the antivirus main 151, the decryption module 152, the exploration module 154, the evaluation module 156, the CPU emulator 158, or the virtual memory 160 is not provided by the operating system 150.

Instead, the rationale of the Office Action appears to be based on the notion that a function performed by application software executing on a machine, which is also executing an operating system, is provided by the operating system, rather than the application software. This is incorrect, as the application software is the entity that is responsible for the performance of the function, and without the application software executing on the machine, the function would not be performed. For example, in the approach of *Nachenberg*, the operating system 150 does not cause a CPU emulator with virtual memory to simulate untrusted programs/instructions, but rather the execution of the antivirus program does. The operating system 150 of *Nachenberg* does not provide any functionality analogous to a limited environment as claimed.

As a result, *Nachenberg* fails to disclose, teach, or suggest numerous elements of Claim 1. For example, Claim 1 features "wherein said limited environment and said general environment are both provided by the same operating system." The Office Action argues that this feature is shown by *Nachenberg's* antivirus program. However, assuming, *arguendo*, that *Nachenberg's* antivirus program is analogous to a limited environment, it is clear from FIG. 1 that the *Nachenberg's* antivirus program is not provided by an operating system, let alone the same operating system that is providing

the general environment. Consequently, *Nachenberg* cannot disclose, teach, or suggest this feature of Claim 1.

As a result, even if *Schnurer* and *Nachenberg* were combined (assuming, *arguendo*, that it would have been obvious to combine the references), the resulting combination would still fail to disclose, teach, or suggest elements of Claim 1. Consequently, Claim 1 is patentable over the cited art and is in condition for allowance.

Claims 3-17 and 19-32

Claims 3-16 are dependent claims, each of which depends (directly or indirectly) from Claim 1. Each of Claims 3-16 is therefore allowable for at least the reasons given above with respect to Claim 1. In addition, each of Claims 3-16 introduces one or more additional limitations that independently render it patentable. Due to the fundamental differences already identified, to expedite the positive resolution of this case, a separate discussion of the limitations of Claims 3-16 is not included at this time. The Applicant reserves the right to further point out the differences between the cited art and the novel features recited in the dependent claims at a later time.

Claims 17 and 19-32 include limitations similar to Claims 1 and 3-16 respectively, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 17 and 19-32 are patentable over *Schnurer* for at least the reasons given above with respect to Claims 1 and 3-16.

CONCLUSION

For the reasons given above, the Applicant submits that the pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all pending claims is respectfully solicited.
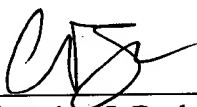
The Examiner is invited to telephone the undersigned at (408) 414-1225 to discuss any issue that may advance prosecution.

No fee is believed to be due specifically in connection with this Reply. The Commissioner is authorized to charge any fee that may be due in connection with this Reply to our Deposit Account No. 50-1302.

Respectfully submitted,

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Dated: October 21, 2005

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **Mail Stop Amendment**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

On October 21, 2005 By _____
Angelica Maloney

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